Chapter 1 : Air Pollution

Every printing facility emits some air pollution. Depending on the amount of pollution emitted, you may have to comply with requirements issued by the DNR and/or EPA.

Emissions of volatile organic compounds and hazardous air pollutants are the main concerns. Additional pollutants include nitrogen oxides, sulfur oxides, carbon monoxide, and particulate matter. These pollutants are called criteria pollutants.

Volatile organic compounds, or VOCs, are chemicals that contribute to the formation of ground-level ozone, a component of smog. Hazardous air pollutants, or HAPs, are compounds that, when emitted, are considered hazardous to the environment and public health. Refer to the Cyan Ink Room section of this document for the list of HAPs regulated by EPA and DNR.

Facility: all sources of air pollution on property or properties with shared boundaries owned or operated by the same entity.

Source: an individual piece of equipment that emits air pollution, such as a press or stand alone bindery line.

Volatile Organic Compounds (VOCs): chemicals that contribute to smog when emitted to the atmosphere.

Where do VOCs and HAPs come from?

In printing, VOCs and HAPs primarily originate from inks, fountain solution additives (alcohols, alcohol substitutes), solvent-based plate making, cleaning solvents, coatings, and adhesives. Generally, VOCs and HAPs evaporate into the air, causing pollution.

Acetone, methylene chloride, methyl acrylate, t-butyl acetate, and 1,1,1-trichloroethane, common solvents in materials used by printers, are among the chemicals not regulated as VOCs. Make note of these materials, as you do not have to include them in VOC emission calculations.

Hazardous Air Pollutants (HAPs): compounds that, when emitted, are considered hazardous to the environment and public health.

Where do the other pollutants come from?

Combustion of fossil fuels like natural gas and fuel oil produce criteria pollutants such as nitrogen oxides, sulfur oxides, carbon monoxide, and particulate matter. Boilers, heaters, furnaces, press dryers and other fuel combustion units generate criteria pollutants.

Particulate matter is solid matter or condensable organic matter that will form an aerosol. At a heatset web offset printing facility, particulate matter emissions are released from press materials as they go through the dryer and from the combustion of fuel by the dryer. Also, if a waste paper handling system is used for trimming or similar operations, dust or particulate matter emissions may result.

Criteria Pollutants: pollutants regulated by US Environmental Protection Agency, which sets National Ambient Air Quality Standards for each criteria pollutant to protect health and welfare of the public and the environment.

Particulate Matter: any airborne solid or liquid material of a size measured in microns (or micrometers). Total particulate is anything less than 100 microns. EPA regulates categories of PM10 and PM2.5 or particulates smaller than 10 and 2.5 microns respectively.

Section A: ERP Eligibility

Is my printing facility eligible to participate in the ERP?

Actual Emissions: the amount of a pollutant emitted from the facility.

A printing facility is eligible to participate in the ERP if actual emissions are less than:

- 5.0 tons per year of any one federal HAP
- 12.5 tons per year of all federal HAPs, and
- 25 tons per year of VOCs and each of the criteria pollutants

If my facility is **not** eligible to participate in the ERP, what do I do next?

If you are NOT eligible for the ERP, you may need to obtain a traditional or General Operation Permit from DNR's Air Program.

If your facility is not eligible for the ERP:

- do not continue to complete the checklist in this workbook
- contact the Small Business Clean Air Assistance Program (SBCAAP)
  - ➢ SBCAAP will assist with DNR's permit process
- complete the Ineligibility Form included in this packet and submit to DNR following instructions on the form

How do I determine whether my facility is eligible?

There are three tests for eligibility. They are emissions of VOCs, HAPs, and criteria pollutants. To determine whether your printing facility qualifies for participation in the ERP, you must either:

- determine total product usage or
- calculate actual emissions for a full calendar year

Calculation examples for actual emissions begin on page A-5.

If you use a control device to be eligible for either VOCs or HAPs, you must calculate your actual emissions. First, we'll walk through eligibility based on material usage.

Section A1 - Eligibility Based on Material Usage

VOC Eligibility

Your printing facility is eligible for participation in the ERP if:

1. total material used at your facility in a year is less than the thresholds in the table of Facility VOC Eligibility Thresholds below, or
2. your actual VOC emissions are less than 25 tons

Be aware that when using purchase records for actual usage accounting, it is usually helpful to complete and apply a year end inventory of VOC containing products to the purchase record. This step will translate into a more accurate accounting of actual "usage" of each product for that calendar year.

How do I determine my usage of VOC-containing materials?

1. Review the thresholds in the Facility VOC Eligibility Threshold table for the type and amount of materials that constitute the threshold.
2. Using records for the previous calendar year, total the amount used for all appropriate materials
   - ➢ solvent-based cleaning materials used at the press, on rags, in cold cleaning machines, etc.
   - ➢ isopropyl alcohol or other additives used in fountain solution
   - ➢ inks, coatings, and adhesives used on presses or other equipment
3. Compare your usage totals with the Facility VOC Eligibility Thresholds table to determine whether your facility is eligible.

Don't Forget! Acetone, methylene chloride, methyl acrylate, t-butyl acetate, and 1,1,1-trichloroethane are not VOCs. **Don't include them in your determination.**

My facility operates more than one printing process. How do I determine eligibility?

If you operate more than one printing process (e.g., litho and flexo, screen and litho, flexo and screen, etc.) in your facility, you could either:

- calculate actual emissions to determine eligibility or
- pick the press type at your facility with the lowest consumption threshold listed in the Facility VOC Eligibility Thresholds table. Use that threshold amount to determine your emissions status

For example, a printer operating both digital and screen printing would:

1. Add amounts of ink and clean-up solvents used in the previous calendar year.
2. Refer to the Facility VOC Eligibility Thresholds table.
3. Find press type with lowest threshold. That is digital printing, with a threshold of 6,000 gallons.
4. If the total ink and clean-up solvent used at the facility is less than 6,000 gallons, the facility is eligible.

Facility VOC Eligibility Thresholds

Press Type	Threshold
Sheetfed/ Non-heatset Lithographic	7,100 gallons of cleaning solvent and fountain solution additives.
Heatset Web Offset Lithographic	50,000 lbs of ink, cleaning solvent and fountain solution additives.
Digital Printing	6,000 gallons of solvent from inks, clean up solutions.
Screen Printing	7,100 gallons of solvent from inks, clean up solutions.
Flexographic (Water-based and UV)	200,000 pounds of water-based and/or UV inks, coatings and adhesives.
Flexographic (Solvent)	50,000 pounds of solvent from inks, dilution solvents, coatings and adhesives.

HAP Eligibility

Your printing facility is eligible to participate in the ERP if:

1. during the previous calendar year, your facility used fewer than 1333.0 gallons of total materials containing any one HAP as defined by federal standards, AND
2. during the previous calendar year your facility used fewer than 3333.0 total gallons of all materials containing HAPs as defined by federal standards

Refer to the Cyan Ink Room for the list of HAPs.

Materials contain different percentages of HAPs. Does this affect the way I determine the amount used?

Yes. Even if materials contain a very small percentage of HAP, you must include the entire amount used when determining usage totals. If the amount used

exceeds the threshold, you might still qualify but you will have to calculate the actual emissions to determine eligibility for the ERP. For calculations of actual emissions go to page A-5.

How do I determine my usage of HAP-containing materials?

1. Identify which products contain at least one federal HAP.
2. List every product used or purchased during the previous calendar year containing the same HAP. Add together the amount used or purchased or these products. This will produce totals for each individual HAP. Usage of each individual HAP must be less than 1333.0 gallons per year.
3. List any product used or purchased during the previous calendar year that contains one or more HAP. Add together the amounts used or purchased of all these products. The total usage of all products with at least one HAP must be less than 3333.0 gallons per year.
4. If product usage at your facility meets the standards in numbers 2 and 3 above, move on to determine if you meet eligibility thresholds for criteria pollutants.

Eligibility for Criteria Pollutants

Criteria pollutants (nitrogen oxides, sulfur dioxide, carbon monoxide, and particulate matter) are emitted at printing facilities. The main sources of criteria pollutants include:

- burning fuels for heat or process steam/heat
- heatset web offset presses due to ink oil
- cutting and trimming operations, or from collection devices on such operations

For natural gas and distillate fuel oils (e.g., diesel fuel, #1 fuel oil, and #2 fuel oil), nitrogen oxides are the pollutant of concern.

Nitrogen Oxides (NOx) and Sulfur Oxides (SOx): compounds generated from the combustion of fuel oil, liquid propane gas, natural gas, etc. which contribute to smog and acid rain.

What are the fuel usage eligibility thresholds?

When fossil fuels such as natural gas, fuel oil, or coal are burned, all criteria pollutants as well as hazardous air pollutants are emitted. When emissions of nitrogen oxides (NOx) or sulfur dioxide (SO2) from fuels are capped at the ERP eligibility threshold of 25 tons per year, all other criteria pollutant emissions will be far below the eligibility thresholds for the respective pollutants. Check the Fuel Usage Eligibility Thresholds table below. If your facility does not exceed the listed fuel consumption levels, NO_x and SO_2 emissions will be less than 25 tons per year.

Fuel Usage Eligibility Thresholds

Fuel (Unit Size)	Fuel Usage
Natural Gas* (<10 million Btu/hr)	500 million cubic feet/yr
Natural Gas (10-100 million Btu/hr)	350 million cubic feet/yr
Distillate Fuel Oil (sulfur = 0.05%)	2,500,000 gallons/yr

*Includes Propane

Particulate Matter

Another criteria pollutant common to printing operations is particulate matter or PM. The primary source of PM are ink oils from heatset web offset presses.

How do I keep heatset web offset press emissions below eligibility thresholds?

The threshold for VOC eligibility is 50,000 pounds of ink used from lithographic printing. If this threshold is not exceeded, it is assured that less than 10 TPY of PM will be produced from ink oils from uncontrolled heatset web offset presses.

50,000 lb cap equals 10 TPY PM if uncontrolled.

Control devices such as thermal or catalytic oxidizers will reduce particulate matter from ink oils by the same amount that the VOCs are reduced. Calculations show that so long as controlled VOCs are below 25 TPY, then PM is around 10 TPY.

Total PM from fuels based on the Fuel Usage Eligibility Threshold table on page A-4 would be 2.5 TPY or less.

Are my particulate matter emissions eligible?

PM emissions from facilities with heatset web offset presses are eligible if:

1. the facility is eligible under the VOC thresholds
2. fuel usage is below eligibility thresholds

Section A2 - Eligibility Based on Actual Emissions

The total materials used in my facility last year is too high to qualify for ERP. Can I calculate actual emissions instead?

Yes. If your facility used too much material (inks, solvents, fuels, etc.) to qualify for ERP participation based on the product usage option, you may still qualify when actual emissions are calculated.

How do I determine VOC actual emissions?

The following equations show how to calculate VOC actual emissions for different materials used on presses.

Total material used x VOC content x emission factor = VOC emissions

The emission factor in the equation above refers to DNR policy allowing printers to account for materials that are not emitted. The basis for allowed emission factors is:

- a factor of 0.05 for inks on sheetfed or non-heatset lithographic presses reflects that 95% of ink oils are retained on the substrate
- a factor of 0.85 for inks on heatset lithographic presses reflects that 15% of ink oils are retained on the substrate
- a factor of 0.50 on cleaning solvent is ONLY to be used when the VOC composite vapor pressure is less than 10 mmHg at 20°C and ONLY if the solvent is used in conjunction with shop towels and those shop towels are stored in closed containers
- to determine tons per year, divide pounds of emissions by 2,000

My facility uses one or more add-on control devices to minimize emissions. How does that affect calculations?

For each portion of your operations directed to a control device, include the control efficiency for that device when calculating emissions. For example, the

VOC calculation when a control device is used would look like this:

VOCs Emitted = Total VOC emissions from materials used x [1-(capture efficiency x destruction efficiency)]

1. For the control efficiency, use either the results of the latest destruction efficiency test conducted on your control device or 90%, the default destruction efficiency.
2. The capture efficiency must be determined by testing, except as explained below for heatset web offset presses.
3. Multiply the capture efficiency and destruction efficiency.
4. Subtract the answer from 1.
5. Multiply the result by the Total VOC emissions from the materials.
6. The result is the actual emissions of VOCs from your facility.

How do I calculate VOCs for Heatset Web Offset Lithographic Presses?

To calculate VOCs for heatset web offset lithographic presses:

- check that the air pressure flow to the dryer is negative relative to the surrounding pressroom
- check that no visible smoke is emitted at the exit slot of the dryer

If these two requirements are met, then calculate VOC emissions for heatset web offset lithographic presses in your facility using the capture efficiencies in the table below for each material indicated.

To obtain a fraction, you divide a percentage by 100
Fraction = % / 100

To calculate, change the percentage to a fraction (i.e., 40% = 40/100 or 0.40).

Press Section	**Capture efficiencies**
Ink	100%
Fountain Solution	70% for alcohol substitutes 50% for alcohol
Automatic Blanket Washes	40%

For example, the VOC emissions from a heatset web offset lithographic press with an oxidizer achieving 90% destruction would be as follows. Note that the weight percent VOC content and the capture and destruction efficiencies have been converted into a fraction for each item.

Product	Usage (pounds)	x	VOC Content	x	Emission Factors	=	VOC Emissions
Ink	100,000	x	1.0	x	1-(1x0.9)	=	4,000
Fountain Sol'n	10,000	x	0.4	x	1-(0.7x0.9)	=	3,700
Auto Blanket Wash	5,000	x	1.0	x	1-(0.4x0.9)	=	3,200
Manual Blanket Wash	5,000	x	1.0	x	0.5	=	2,500
Total Pounds VOC							13,400
Total TONS VOC (total pounds / 2000)							6.70

After completing calculations for VOC emissions, if the total VOCs is less than 50,000 pounds or 25 tons in a calendar year, your printing facility is eligible for the ERP.

Density of Material = specific gravity x 8.34 lb/gal. The specific gravity is the fraction of the density of the material in relation to the density of water, which is 8.34 lb/gal.

How do I determine HAP emissions?

The method for calculating HAP emissions is similar to that used to calculate VOC emissions. Refer to the calculation table on page A-6 for standard emissions equations for printing facilities. You would replace the VOC content with HAP content. When using those equations, it's important to note that HAP quantities in pounds per gallon (lb/gal) are rarely provided on Material Safety Data Sheets (MSDS). It will be necessary to perform additional calculations to obtain the HAP content in lb/gal.

To determine the value for HAP in lb/gal do the following calculation for each HAP in your materials, referring to the material MSDS for the values indicated:

- determine total usage of each HAP-containing material in pounds (lbs) or gallons (gal)
- find the density of each material (ink, solvent, etc)
- find the percent by weight of each HAP (Sometimes VOC or HAP content is only provided as a percent BY VOLUME. This number cannot be used. Content "by volume", if not spelled out as such may be abbreviated as "v/v" or "bv" on the MSDS.)
- if the percent by weight isn't provided on the MSDS, contact the material supplier to provide the data needed to calculate HAPs in lb/gallon
- if the percent by weight for each HAP is provided, multiply it by the density of the material to determine the HAP content in lb/gal
- if the density isn't provided, multiply the specific gravity by 8.34
- add together all individual HAP contents to determine total HAP content

Then, use the following formula to calculate HAP content:

HAP Content (in lb/gal) = HAP content (% by weight) x density of material (in lb/gal)

Finally, determine the HAP emissions using the following formula:

HAPs (in lbs) = Total material used x HAP content x emission factor

Once you've completed your calculations, you are eligible if:

- your emissions of each federal HAP are less than 10,000 pounds per year
- your emissions of total federal HAPs combined are less than 25,000 pounds per year

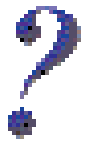
Do I need to calculate actual emissions of criteria pollutants?

You do not need to calculate actual emissions of criteria pollutants if you:

- use less than the levels in the Fuel Usage Eligibility Thresholds table on A-4
- heatset web offset presses using less than the Facility VOC Eligibility Thresholds on page A-3

Eligibility Checklist: Do I meet all thresholds for ERP eligibility?

1. HAPs:
   a. Is your total usage of materials containing any one federal HAP less than 1333 gallons per year and total usage of materials containing all federal HAPs combined less than 3333 gallons per year? OR
   b. Are your actual emissions less than 10,000 pounds per year of each federal HAP and less than 25,000 pounds per year of all federal HAPs combined?
2. VOCs:
   a. Is your usage of materials less than the thresholds in the VOC Eligibility Threshold table on page A-4? OR
   b. Are your actual emissions less than 50,000 pounds per year of total VOCs?
3. Criteria Pollutants: Is your fuel usage below the thresholds in the Fuel Usage Eligibility Thresholds table on page A-4?

	**Question A.1:** Do you fall within the eligibility thresholds for the ERP?	❑ Yes. Continue on with the workbook. ❑ No. STOP using this workbook. Complete the Non-Eligibility Form.

Now that you have determined your facility qualifies for participation in the ERP, the following pages address emission standards with which all printers must comply.

Section B: Emission Standards

Since VOCs are the primary pollutants emitted by printers, the VOC emission standards will be reviewed first. Eligibility standards for emissions vary, depending on the size of a printing operation. Size is determined by the amount of materials used. The more VOC-containing materials used, the greater the emissions.

How do I determine the Size Category?

If your facility is eligible based on product usage, refer to the Facility VOC Size Category Table on page A-9. Compare the amount of materials used at your facility with the numbers in the table to determine whether your facility is a Very Small, Small, or Medium printer.

If your facility was eligible based on actual VOC emissions, compare your total emissions from the previous calendar year with the following to determine Size Category:

a. less than 6,000 pounds you are a **Very Small printer**,
b. at least 6000 pounds, but less than 20,000 pounds you are a **Small printer**, or
c. at least 20,000 pounds, but less than 50,000 pounds you are a **Medium printer**

Facility VOC Size Category Table			
Press/Size	**Very Small**	**Small**	**Medium**
Sheetfed/ Non-heatset Lithographic	852 gallons of cleaning solvent and fountain solution additives	2,840 gallons of cleaning solvent and fountain solution additives	7,100 gallons of cleaning solvent and fountain solution additives
Heatset Web Offset Lithographic	6,000 lbs of ink, cleaning solvent and fountain solution additives	20,000 lbs of ink, cleaning solvent and fountain solution additives	50,000 lbs of ink, cleaning solvent and fountain solution additives
Digital Printing	727 gallons of solvent from inks, clean up solutions	2,425 gallons of solvent from inks, clean up solutions	6,000 gallons of solvent from inks, clean up solutions
Screen Printing	855 gallons of solvent from inks, clean up solutions	2,850 gallons of solvent from inks, clean up solutions	7,100 gallons of solvent from inks, clean up solutions
Flexographic (Water-based and UV)	24,000 pounds of water-based inks, coatings, adhesives	80,000 pounds of water-based inks, coatings, adhesives	200,000 pounds of water-based inks, coatings, adhesives
Flexographic (Solvent)	6,000 pounds of solvent from inks, dilution solvents, coatings, adhesives	20,000 pounds of solvent from inks, dilution solvents, coatings, adhesives	50,000 pounds of solvent from inks, dilution solvents, coatings, adhesives

	**Question A.2:** What is your facility's VOC Size Category?	❑ Very Small ❑ Small ❑ Medium

Section B1 - VOC Emission Standards

You have determined your facility's VOC Size Category. Now you are able to determine which VOC emission standard you must meet.

ALL Printers

All printers must meet the following VOC emissions requirements. **Printers that reach the Small or Very Small category because they have a control device and calculated their actual emissions to determine their size, MUST meet the requirements of Medium printers.** Other Small or Very Small Printers need only meet the following requirements.

VOC material handling requirements:

- keep press clean-up solutions containers closed except when dispensing or filling

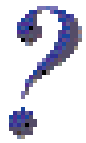
These material handling requirements are based on the general organic compound requirements in NR 419. By continuing to meet the thresholds for Very Small and Small printers, there are no other emissions standards you will be required to meet.

- keep shop towels soiled with inks and clean-up solutions in closed containers when not in use
- cover fountain solution mixing and storage tanks except when adding or draining solution
- all VOC-containing materials and waste must be contained to prevent evaporation (i.e., store in closed container)

Cold cleaning operations:

- each cold cleaning unit is exempt from VOC requirements if less than 1.5 gallons per day of solvent are added
  - ➢ to determine if exempt, take the number of gallons added and divide by the number of days since the last addition of solvent
- if not exempt, each cold cleaning unit must meet certain design and operating requirements (refer to the Cyan Ink room for detailed requirements)

A Return to Compliance Plan (RTCP) formis found within this workbook package.

	**Question A.3:** Are you meeting all VOC emission requirements listed in this section?	❑ Yes. Very Small and Small Printers skip to Requirements for Fuel Combustion, **unless you determined your size category by calculating actual emissions and have a control device.** ❑ No. Submit RTCP.

Medium Printers

Medium printers must meet the standards above for material handling and cold cleaning operations. In addition, emission standards in the two tables on page A-11, VOC Emission Standards for Medium Lithographic Printers and VOC Emission Standards for All Other Medium Printers, must be met.

Emission standards for Medium printers are specific to each process:

- non-heatset offset lithographic printing
- heatset web offset lithographic printing
- gravure and flexographic printing
- screen printing
- digital printing
- letterpress printing

If your printing operations include two or more types of printing, the performance standards in the VOC Standards Tables apply to each of the corresponding operations.

All calculations necessary to determine whether you meet the VOC Emission Standards can be found in the Cyan Ink Room section of this workbook. The calculation examples include fountain solution averaging and material VOC content and vapor pressures.

Exemption from Standards

Notwithstanding the limits in the table, you may use up to 55 gallons combined of inks, coatings, or roller/blanket wash with a higher VOC content or vapor pressure than specified, in any 12-month period. Or if printing on plastic, you may use up to 165 gallons of roller/blanket wash with higher VOC or vapor pressure.

VOC Emission Standards for Medium Lithographic Printers

Material	Non-heatset Offset Lithographic printing	Heatset Web Offset Lithographic printing
Printing Ink	Not applicable	≥ 90% destruction of VOCs, or outlet concentration of ≤ 20 ppmv as Carbon.
Fountain Solution	Webfed presses: ≤ 5% VOC by weight (bw) and no restricted alcohol ≤ 13.5% VOC bw if printing on metal or plastic and refrigerated Sheetfed Presses: ≤ 5% VOC bw if not refrigerated ≤ 8.5% VOC bw if refrigerated ≤ 13.5% VOC bw if printing on metal or plastic, contains restricted alcohol and refrigerated	≤ 1.6% VOC bw if not refrigerated ≤ 3% VOC bw if refrigerated ≤ 5% VOC bw and no restricted alcohol ≤ 13.5% VOC bw if printing on metal or plastic, contains restricted alcohol and refrigerated
Press clean-up solvents	≤ 30% VOC bw Or ≤10 mm Hg vapor pressure at 68°F	≤ 30% VOC bw or ≤10 mmHg vapor pressure at 68°F

NOTE: Fountain solution standards may be calculated on a monthly rolling basis. See the example calculation in the ***Cyan Ink Room***.

Calculation examples in the ***Cyan Ink Room*** section of this workbook include fountain solution averaging and material VOC content and vapor pressures.

VOC Emission Standards for Other Medium Printers

Material	Gravure, flexographic printing	Screen printing
Printing Ink	(1) Volatiles in ink <25% VOC by volume (bv) and ≥ 75% bv of water; OR (2) ink, minus water, ≥ 60% nonvolatile material by volume; OR (3) ≥ 90% destruction of VOCs bw, and overall control ≥ 75% for publication rotogravure, ≥ 65% for packaging rotogravure, or ≥ 60% for flexographic.	≤ 400 g VOC/l (3.3 lbs VOC/gal)
Special Purpose Inks and Coatings	Not applicable	≤ 800 g VOC/l (6.7 lbs VOC/gal)
Other Coatings	Not applicable	≤ 400 g VOC/l (3.3 lbs VOC/gal)
Screen reclamation activities	Not applicable	≤ 0.050 pounds VOC per square foot of screen reclaimed, averaged daily

My facility uses a control device to minimize emissions. What requirements apply?

If you are using a control device to meet either the eligibility thresholds by calculating actual emissions or the VOC emissions standards, then you must meet the following the requirements regarding operation of the control device:

Operation: Monitor the operation of all control devices to ensure they are operating properly.

a. Thermal oxidizers – monitor combustion temperature once every 15 minutes.
b. Catalytic oxidizers –
   i. monitor inlet temperature either once every 15 minutes, and
   ii. monitor catalyst bed reactivity based on the manufacturer's recommended methods.
c. Calibrate or inspect measurement instruments - All instruments used to measure operational variables for air pollution control equipment shall be calibrated yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. When calibration is not appropriate, equipment must be inspected for proper operation.

Maintenance: Maintain control devices as recommended by the manufacturer, or at a frequency based on good engineering practice as established by operational history, whichever is more frequent.

Records: Temperature logs shall be kept electronically or on continuous hard copy printout, at the frequency indicated. Keep a log recording when maintenance takes place and what actions were taken.

Malfunctions and Excess Emissions - What must be done if a control device malfunctions or is not operating?

You must notify DNR by the next business day following any event that causes you to operate any part of your printing operation connected to a control device without operating the control device.

Operation without the control device may cause the facility to exceed emission standards unless they are:

(1) operating without the control device to prevent explosions solely during cold start-up of the equipment, or
(2) if the device is out of service, using only materials that meet the emission standards as applied until the device is back in service.

Records: Keep a log of when control device has been shutdown and restarted while the unit is still in operation. This information may be necessary to calculate actual emissions.

My facility cannot meet the VOC emission standards. What must be done?

If you do not meet one or more VOC emission standards, you must complete the Return to Compliance Plan (RTCP) form and submit that to DNR along with the ERP self-certification form. The RTCP form is found in the workbook package.

Some facilities are able to meet the VOC emission standards by changing the materials used. Contact your supplier to see if materials that meet these standards are compatible with your operations.

If you cannot meet these standards, you are not eligible for the ERP and must obtain a traditional or General Operation Permit.

	**Question A.4:** Medium Printers (and Small or Very Small printers calculating actual emissions and using a control device to determine size): Are you meeting all applicable VOC emission standards listed in this section?	❑ Yes. ❑ No. Submit RTCP.

Section B2 - Requirements for Fuel Combustion

Heating units used for plant heat, process steam, and pollution control devices such as oxidizers may have some additional requirements unless they are powered by electricity.

My facility uses a heating unit that burns fossil fuels. What requirements apply?

All facilities must protect national ambient air quality standards established by the US Environmental Protection Agency (EPA).

Stacks for boilers or furnaces used for building and process heat that are vented outside, must meet the following criteria:

- have upward unobstructed discharge points that are within 10 degrees of vertical
- are taller than all buildings, including the building to which the stack is connected, within a horizontal distance equal to 5 times the building height
  - ➢ To determine if a stack meets the height criterion, multiply the building height by 5 and measure the height of any building within that distance.
    - ❖ For example: If you had a 25 foot stack on a 20 foot building, multiple 20 times 5. (20 x 5=100 feet)
    - ❖ In this example, the stack must be higher than any building within 100 feet in any direction.

Beyond the stack criteria, limiting the eligibility to those that use clean fuels such as natural gas, propane and distillate fuel oils will ensure printing operations participating in the ERP can meet the ambient standards.

	**Question A.5:** Can you meet the requirements for fuel burning units?	❑ Yes. ❑ No. Submit RTCP.

These stack criteria are required in the Registration Operation Permit (ROP) for printers to protect ambient air quality standards. While Medium Printers must comply with the ROP, it is highly recommended that ALL printers meet these criteria.

Unobstructed stack means one without a rain-hat or other cap. Valves designed to open and close at the point of discharge are not considered to be obstructions if they are open at the time of emission.

Vertical discharge means that a stack exhaust must be directed upwards, to within 10° of vertical.

Section B3 - Requirements for Particulate Matter Emissions Sources

Particulate matter (PM) is released from:

- heatset web offset presses due to ink oil
- cutting and trimming operations, or from collection devices on such operations

What requirements apply if I have heatset web offset presses?

Heatset web offset presses use inks that release condensible organic materials as they pass through a dryer. These condensible organic materials form aerosols after they exit the dryer. Then, they are considered PM emissions. Emissions of this type of PM will be significantly lower when a control device such as an oxidizer (incinerator) is used.

It is necessary to calculate the hourly PM emissions to determine if they protect the ambient air quality standards established by US EPA. Any press with less than 0.5 lb/hr PM does not require modeling. Most controlled presses should be able to meet that emission rate. Uncontrolled heatset presses may still be able to meet that rate, but only under limited conditions. The DNR has developed a special method to calculate the amount of the condensable PM released from heatset web offset presses.

How do I calculate my PM emissions from heatset web offset inks?

To simplify the calculations, a spreadsheet titled WI_HeatsetPMCalcs.xls shows:

- ink usage rates and airflow from the dryer at which an uncontrolled press will have emissions below 0.5 lb/hr, and
- the control efficiency that must be achieved to keep emissions below 0.5 lb/hr

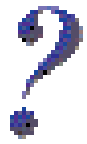
Refer to the calculations in the **Cyan Ink Room** section of this workbook to determine your emissions. The spreadsheet WI_HeatsetPMCalds.xls is available electronically from the SBCAAP.

I have calculated my PM emissions. Now what?

Based on the results of your calculations using the spreadsheet, you need to follow one of these steps:

- If your PM emissions are below 0.5 lb/hr from each press exhaust stack, your emissions protect the ambient standards. Nothing more must be done.
- If your total actual PM emissions are less than 5 TPY, excluding those emissions from any heatset stack that is less than 0.5 lb/hr, then you are also protecting the ambient standards. Nothing more must be done.
- If you cannot meet those two criteria, then you have a number of options:
  - ➢ install a control device that meets the appropriate control efficiency shown in the worksheet
  - ➢ contact the SBCAAP for assistance with additional actions you can take

To contact the SBCAAP for assistance call 608-264-6153.

	**Question A.6:** Do you meet the requirements for the PM from heatset presses?	❑ Yes. ❑ No. Submit RTCP. ❑ NA. We don't have heatset presses.

Do you have a centralized waste paper handling system?

Most trim operations include collection devices such as cyclones and vacuum pumps. The best way to minimize dust emissions to the outside is to use a cyclone and/or baghouse, if appropriate. When dust is removed from the air stream, the exhaust may be safely directed back into the building. This saves heating costs in winter and if the exhaust is directed back into the building, then no additional requirements apply.

Two actions are recommended to ensure the emissions to the ambient (outside) air from a paper trim system are minimized:

1. use a fabric filter collection device as the final collector for fine paper dust, and
2. make sure the final exhaust stack is taller than any building within a distance of 5 times it's building height, directed upwards within 10 degrees of vertical, and has an unobstructed opening for the exhaust (refer back to page A-13 for details)

If the paper trim system exhaust is directed inside the building all year, it is not considered a source of air pollution. If you choose this option, then you may want to confirm that you meet any OSHA requirements that may apply.

	**Question A.7:** Have you applied the recommended actions for particulate matter control from paper trim systems?	❑ Yes. ❑ No. Recommended.

NOTE: If you want to analyze your internal air quality, to protect your workers, you have an option other than contacting OSHA directly. You can receive a free inspection to measure how you comply with OSHA requirements for worker protection by contacting the Wisconsin Safety Consultation (WiSCon) Program at 1-800-947-0553.

Section B4 - Requirements for Visible Emissions

Emissions from processes that can be seen are called visible emissions. These emissions may come from dust, fumes, mist, liquid, smoke, other particulate matter, vapor, gas or any combination of those materials, but do not include steam.

There are limits on how much light those visible emissions can block or, in other words, how much they obscure the view of an object in the background. The amount of light that is blocked is called "opacity." Operations older than April 1, 1972 can have up to 40% opacity, while newer operations can only have 20% opacity. Opacity can be measured through visual observation by trained individuals.

While the person doing the visual observations for opacity should be trained in the USEPA Method 9 for measuring visible emissions, these observations do not need to follow all the test criteria of Method 9.

What requirements apply to visible emissions?

Periodic observations to check for visible emissions from cyclone collectors (when used alone to collect dust from a paper trim system) and from uncontrolled heat-set web offset presses should be performed periodically.

- **Very Small and Small Printers:** it is recommended that simple visual observations be performed at least once a year to see whether there are any visible emissions from those operations.

- **Medium Printers:** if your total PM emissions from uncontrolled heatset web offset presses are greater than 5 TPY you should perform these observations quarterly, while annual observations are acceptable for those with fewer emissions.

If you have any detectable visible emissions you may be required to perform a test to accurately measure the opacity.

	**Question A.8:** Do you meet the visible emission requirements?	❑ Yes. ❑ No. Submit RTCP.

Section C: Hazardous Air Pollutants and State and Federal Rules

Hazardous Air Pollutants (HAPs) are VOCs, toxic metal compounds, or other chemicals emitted to the air that are considered hazardous to the environment and public health. Both EPA and DNR regulate HAPs. Refer to the Cyan Ink Room section for the list of regulated HAPs.

How do you know if you have any HAPs?
Review the MSDS for each material used. In the section called "Hazardous Ingredients" on the MSDS all compounds determined to be hazardous by OSHA are listed. This list should include the amount of the HAP in the material, in % by weight. If it's in % volume, ask the supplier to convert it to % by weight for you. HAPS may also be listed on MSDS under a section called SARA Section 313 or TRI. However, not all chemicals reportable under SARA Section 313 are state or federal HAPs.

Federal HAPs

To qualify for the ERP, printers must meet the eligibility thresholds on page A-2. These threshold levels are no more than 50% of the major source threshold for federal HAPs. Printers that continue to demonstrate eligibility with the ERP automatically meet federal HAP requirements. Nothing more is needed to show compliance with the federal HAP requirements.

State HAPs

The State of Wisconsin has enacted rules regulating HAPs. All printers must comply with these rules. DNR lists 550+ chemicals determined to cause adverse health effects. As a result, facilities must reduce emissions if thresholds of any of these chemicals are exceeded. Many printing inks, coatings, adhesives, and clean-up solvents contain chemicals on the state HAP list. When these materials are used, HAPs might be emitted. Consult your MSDS as well as your manufacturer to obtain information on these specific state HAPs.

My facility uses stacks to discharge emissions. What state HAP requirements apply?

The state HAP rule lists thresholds based on stack height. To meet these thresholds, stacks must be *unobstructed* and have a *vertical* discharge point. If your stacks do not meet these criteria, you can either modify the stacks to make them vertical and unobstructed or you can run a computer model to determine if your emissions will meet the air quality standards established in the rule.

My facility doesn't use stacks—presses are located in a large, open building with ventilation fans. What state HAP requirements apply?
If presses are all located in an open, warehouse-style building using general ventilation fans instead of stacks, those fugitive emissions are exempt from the state HAP requirements entirely. If all your HAP emissions are exempt, skip to the Reporting and Record Keeping Requirements section that follows on page A-24.

Do I have to calculate state regulated HAP emissions from my fuels?
Fuel burning operations using fuels like natural gas, propane, and distillate fuel oil are exempt from the state HAP rule requirements. If you use any other fuels at your facility, you are NOT eligible for participation in the ERP. Printers using other fuels must obtain a traditional or General Operation Permit for their facility.

Unobstructed stack means one without a rain-hat or other cap. Valves designed to open and close at the point of discharge are not considered to be obstructions if they are open at the time of emission.

Vertical discharge means that a stack exhaust must be directed upwards, to within 10° of vertical.

Determining Compliance with State HAP Emission Standards

Following are state HAP emission standards. Very Small printers are required to meet only the Incidental Emission Standards below. Small and Medium printers must meet Incidental Emission Standards and additional requirements.

Section C1 - Very Small Printers: Incidental Emission Standards

Refer to page A-3 for the definition of the Facility VOC Size Category for Very Small Printers. The state HAP rule defines a category of Incidental Emitter as a facility with less than 3 TPY of VOC emissions. The category of Very Small Printers has the same threshold. Therefore, it can be said that a Very Small Printer is an Incidental Emitter under the state HAP rule.

Very Small Printer is defined on page A-3 of the workbook.

As an Incidental Emitter, a printer is only required to evaluate 80 compounds from the regulated list of over 550 to determine whether the facility is in compliance with the rule. The 80 compounds designated for evaluation by Incidental Emitters can be found in the HAP list in the Cyan Ink Room with an "E" in the "State HAP?" column. The HAP Usage Threshold table on page A-19 lists regulated HAPs commonly found at printing facilities.

An **Incidental Emitter** in ch. NR 445, the state HAP rule, is one that has VOC emissions below 3 TPY and PM emissions below 5 TPY. The fuel caps on page A-4, and ducting any dust emissions sources inside all year will keep the PM emissions below 5 TPY.

For each HAP listed you must:
- total the normal usage of all materials containing that HAP
- determine the amount normally used in each hour, day, or year
- compare total usage with standards for each HAP on the table; amounts are given in gallons per hour, 24 hour day, or year
- if usage totals are less than amount listed in the table, your facility is in compliance with the state rule
- if usage totals are more than the amount in the table you may still be in compliance

HAPs that are solid, like Barium and Chromium, are NOT likely to be emitted from printing facilities' press operations. Therefore, thresholds are not given for these HAPs in the HAPs Usage Caps table below.

The total use of a HAP at our facility exceeds the amount listed in the table. How do I determine if our facility is in compliance?

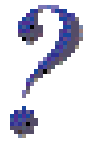
Even if your facility uses more of an HAP-containing material than the level in the HAP Usage Threshold table, your facility might still meet state rule standards.

To determine if you still comply with state rule standards:

- determine which HAPs exceed list usage thresholds
- determine your total usage for all materials containing those HAPs
- determine the actual percentage of HAP content in your materials using data from MSDSs
- the HAP Usage Threshold table assumes the percentage of each HAP is 100%. If your HAPs content is less than 100%, the following calculation will determine the actual usage of the HAP that may show that usage is below the listed threshold

Material Usage (gal/unit time) x % HAP in materials/100 = HAP Usage (gal/unit time)

Keep records on file that show how you performed the calculations.

	**Question A.9:** **Very Small Printers:** Are your HAP emissions below all the thresholds for the compounds listed in the table on A-19?	❑ Yes. ❑ No. Contact SBCAAP for assistance.

Section C2 - Small and Medium Printers

Small and Medium Printers are defined on page A-3 of the workbook.

All *Small and Medium printers* must follow the procedures outlined above for Very Small Printers, but they must review the whole list of HAPs in the HAP Usage Threshold table. Refer to page A-3 for the definitions of Small and Medium Printers.

The state HAP rule can be found at: **http://dnr.wi.gov/org/aw/air/health/airtoxics/**

If materials used by Small and Medium printers contain HAPs not included in the HAP Usage Threshold table below, those printers must review the full list of regulated HAPs found in the Cyan Ink Room section of this workbook.

If any other HAPs listed on your MSDS are regulated by the state, you must calculate the emissions and compare them with the thresholds found in the state HAP rule. You will find spreadsheets in the Cyan Ink Room section of this workbook to help you with the calculations. Keep copies of all calculations you perform for this purpose.

HAPs Usage Threshold Table

(assuming 100% HAP in Material)

NOTE: The value "gal/24 hr avg" in the table indicates the maximum number of gallons you may use in a 24 hour period and still not exceed the hourly average value in the rule.

Chemical Name	CAS Number	Stacks < 25 ft	Stacks ? 25 ft to <40 ft
Compounds applicable to ALL printers:			
Acetaldehyde	75-07-0	0.48 gal/hr	1.52 gal/hr
		115.42 gal/yr	474.00 gal/yr
Acrylamide	79-06-1	0.0048 gal/ 24 hr avg	0.021 gal/24 hr avg
		0.1957 gal/yr	0.8029 gal/yr
Acrylic acid	79-10-7	1.087 gal/ 24 hr avg	42.1 gal/ 24 hr avg
		25.42 gal/yr	104.28 gal/yr
Benzene	71-43-2	32.57 gal/yr	133.71 gal/yr
Cadmium and cadmium compounds	7440-43-9	Not emitted	Not emitted
Chromium (VI): Chromic acid mists and dissolved aerosols	7440-47-3	Not emitted	Not emitted
Chromium (VI): compounds and particulates	7440-47-3	Not emitted	Not emitted
Cobalt, elemental, and inorganic compounds	7440-48-4	Not emitted	Not emitted
Formaldehyde	50-00-0	19.57 gal/yr	80.28 gal/yr
Hydrogen chloride (Hydrochloric acid; Muriatic acid)	7647-01-0	0.0796 gal/hr	0.2529 gal/hr
		507.71 gal/yr	2085.71 gal/yr
Manganese, elemental and inorganic compounds, as Mn	7439-96-5	Not emitted	Not emitted
Methylene chloride (Dichloromethane)	75-09-2	31.98 gal/ 24 hr avg	124.11 gal/ 24 hr avg
		540.14 gal/yr	2218.85 gal/yr
Nitric acid	7697-37-2	0.95 gal/ 24 hr avg	3.70 gal/ 24 hr avg
Perchloroethylene (Tetrachloroethylene)	127-18-4	31.23 gal/ 24 hr avg	121.37 gal/ 24 hr avg
		43.0 gal/yr	176.71 gal/yr
Phosphoric acid	7664-38-2	0.185 gal/ 24 hr avg	0.71 gal/ 24 hr avg
		253.85 gal/yr	1042.85 gal/yr
2,4-/2,6-Toluene diisocyanate (TDI)	584-84-9	0.007 gal/ 24 hr avg	0.26 gal/ 24 hr avg
		23.14 gal/yr	94.85 gal/yr

HAPs Usage Threshold Table

(assuming 100% HAP in Material)

NOTE: The value "gal/24 hr avg" in the table indicates the maximum number of gallons you may use in a 24 hour period and still not exceed the hourly average value in the rule.

Chemical Name	CAS Number	Stacks < 25 ft	Stacks ≥ 25 ft to <40 ft
Compounds applicable to Small and Medium Printers ONLY:			
Ammonia	7664-41-7	3.20 gal/24 hr avg	12.44 gal/24 hr avg
		2538.42 gal/yr	10,428.57 gal/yr
Barium, soluble compounds, as Ba	7440-39-3	Not emitted	Not emitted
n-Butyl alcohol (n-Butanol)	71-36-3	1.61 gal/hr	5.14 gal/hr
Chloroform	67-66-3	8.98 gal/24 hr avg	34.96 gal/24 hr avg
		11.04 gal/yr	45.28 gal/yr
Copper and compounds, fume, as Cu	7440-50-8	Not emitted	Not emitted
Cumene (Isopropyl benzene)	98-82-8	45.25 gal/24 hr avg	175.88 gal/24 hr avg
Cyclohexanone	108-94-1	17.72 gal/24 hr avg	68.90 gal/24 hr avg
Dibutyl phthalate (Di-n-butyl phthalate)	84-74-2	0.921 gal/24 hr avg	3.566 gal/24 hr avg
Diethanolamine	111-42-2	0.367 gal/24 hr avg	1.43 gal/24 hr avg
EGBE (2-Butoxyethanol; Ethylene glycol monobutyl ether; butyl cellosolve)	111-76-2	17.79 gal/24 hr avg	69.25 gal/24 hr avg
		329,990 gal/yr	1,355,700 gal/yr
EGEE (2-Ethoxyethanol; Ethylene glycol monoethyl ether; cellosolve)	110-80-5	3.39 gal/24 hr avg	13.20 gal/24 hr avg
		5076.85 gal/yr	20857.14 gal/yr
EGEEA (2-Ethoxyethyl acetate; Ethylene glycol monoethyl ether acetate; Cellosolve acetate)	111-15-9	4.97 gal/24 hr avg	19.33 gal/24 hr avg
Ethyl benzene	100-41-4	79.88 gal/24 hr avg	310.62 gal/24 hr avg
		25,384 gal/yr	104,285 gal/yr
Ethylene glycol vapor and aerosol	107-21-1	1.067 gal/hr	3.40 gal/hr
Glycol ethers	Not applicable	2857.14 gal/yr	2857.14 gal/yr
n-Hexane	110-54-3	32.46 gal/24 hr avg	126.17 gal/24 hr avg
		5076.85 gal/yr	20,857.14 gal/yr
Hydroquinone	123-31-9	0.367 gal/24 hr avg	1.43 gal/ 24 hr avg
Isobutyl alcohol	78-83-1	27.91 gal/ 24 hr avg	108.34 gal/ 24 hr avg
Isophorone	78-59-1	0.3014 gal/hr	0.9600 gal/hr

HAPs Usage Threshold Table

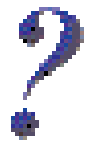
(assuming 100% HAP in Material)

NOTE: The value "gal/24 hr avg" in the table indicates the maximum number of gallons you may use in a 24 hour period and still not exceed the hourly average value in the rule.

Chemical Name	CAS Number	Stacks < 25 ft	Stacks ≥ 25 ft to <40 ft
Compounds applicable to Small and Medium Printers ONLY:			
Lead compounds	7439-92-1	Not emitted	Not emitted
Methanol	67-56-1	2857.14 gal/yr	2857.14 gal/yr
Methyl chloroform (1,1,1-Trichloroethane; TCA)	71-55-6	2857.14 gal/yr	2857.14 gal/yr
Methyl isobutyl ketone (MIBK; Hexone)	108-10-1	37.71 gal/ 24 hr avg	146.40 gal/ 24 hr avg
Naphthalene	91-20-3	9.66 gal/ 24 hr avg	37.37 gal/ 24 hr avg
Phenol	108-95-2	3.53 gal/ 24 hr avg	13.78 gal/ 24 hr avg
Propylene oxide	75-56-9	8.74 gal/ 24 hr avg	33.97 gal/ 24 hr avg
		68.57 gal/yr	281.85 gal/yr
Stoddard Solvent	8052-41-3	105.60 gal/ 24 hr avg	408.00 gal/ 24 hr avg
Toluene	108-88-3	34.63 gal/ 24 hr avg	134.74 gal/ 24 hr avg
		10153.57 gal/yr	41714.28 gal/yr
Trimethyl benzene	25551-13-7	22.63 gal/ 24 hr avg	87.77 gal/ 24 hr avg
Vinyl acetate	108-05-4	6.48 gal/ 24 hr avg	25.20 gal/ 24 hr avg
		5076.85 gal/yr	20857.14 gal/yr
Xylenes	1330-20-7	79.88 gal/ 24 hr avg	310.63 gal/ 24 hr avg

Compliance Check: Have you met the state HAP rule standards?

- are all your material or HAP usage amounts less than those listed in the table
- Or are your HAP emissions below threshold amounts in the rule
- if so, you can check YES in the box below
- if not, contact the SBCAAP for assistance
- continue to complete the self-certification form in this workbook



Question A.10:
Small and Medium Printers: Are your HAP emissions below the table thresholds?

❑ Yes.
❑ No. Contact SBCAAP for assistance.

If you are unable to check Yes for Question A.10 given the information provided here, but you believe you comply with the rule, contact the SBCAAP for assistance at 608-264-6153.

Section D: Reporting and Record Keeping Requirements

Very small, Small, and Medium printers have different reporting and record keeping requirements.

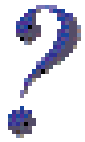
Only those printers in the Medium category will be charged the requisite annual emissions fee based on what they report.

Refer to page A-24 for details on the Type C Registration Operation Permit.

Section D1 - Reporting

To demonstrate they are eligible for the ERP, all printers are required to report either their annual materials usage or actual emissions for the previous calendar year. As a benefit of participation in the ERP, very small and small printers will be able to report their annual usage of press materials and fuels through the self-certification form included with this workbook. Medium printers that must obtain a Type C Registration Operation Permit are required to report via the DNR's Consolidated Reporting System.

Complete all items in question A.11 below. If you are already using calculations of actual emissions to determine your VOC emissions (as shown on page A-5), then you should use the results of those calculations to report emissions on the ERP workbook self-certification form.

	**Question A.11:** Are you reporting air emissions via DNR's CRS?	❑ Yes. Skip to next section. ❑ No. Complete questions 11a - 11d.

11a.	Fuel Usage	? Natural gas (units <10 million BTU/hr) = _____ million cubic feet per year ? Natural gas (units 10 - <100 million BTU/hr) = _____ million cubic feet per year ? Distillate fuel oil (sulfur = 0.05%), _____ gallons per year ? Distillate fuel oil (sulfur = 0.5%), _____ gallons per year
11b.	VOC Usage/ Emissions	? material usage _____ (gallons/pounds, circle one) per year of all solvent based materials ? emissions of _____ pounds per year
11c.	Federal HAP Usage/ Emissions	? material usage _____ (gallons/pounds, circle one) per year of all solvent based materials ? emissions of _____ pounds per year
11d.	State HAP Emissions	? We are below the thresholds in the HAPs Usage Threshold table. ? We have calculated emissions below the thresholds in the state HAP rule.

Section D2 - Record Keeping Requirements

Very Small and Small Printers must keep basic records. Medium Printers must keep more detailed records.

Printers in all size categories must keep all records onsite for at least five years and have them readily available for a DNR or EPA inspection. Maintain copies of Material Safety Data Sheets (MSDS) on file for all VOC and HAP-containing materials used.

OSHA requires you to keep MSDS for all products purchased or stored at your facility, not only press materials.

Very Small and Small Printers

Very Small and Small printers must:

- keep purchase or usage records
- determine usage or calculate emissions on a calendar year basis
- include inks, cleanup solutions, fountain solution, fountain solution additives, coatings, and adhesives

A sample record keeping format is available in the Cyan Ink Room section of this workbook.

Medium Printers

Medium printers must:

- keep purchase or usage records
- determine usage or calculate emissions on a calendar year basis
- include inks, clean-up solutions, fountain solution, fountain solution additives, coatings, and adhesive.
- if using the averaging method to determine fountain solution VOC content, keep specific record of the averages for each press
- demonstrate that VOC Emissions Standards starting on page A-11 are met

To demonstrate that the VOC Emissions Standards on page A-11 are met, Medium printers must use the VOC content or the vapor pressure measured in mmHg. This information is usually available on a MSDS. However, if that information is not provided on a MSDS, printers must calculate those values and retain records of those calculations. For guidance on alternative methods to calculate the VOC content and vapor pressure, see the Cyan Ink Room section of this workbook where calculation examples are provided.

Review the calculations in the **Cyan Ink Room** section for guidance on alternative methods to calculate the VOC content and vapor pressure.

	**Question A.12:** Are you maintaining all records required for your size printer?	❑ Yes. ❑ No. Submit RTCP.

Section E: Permit Requirements for Construction or Modification Projects and Existing Operations

Facilities that emit air pollution and are not otherwise exempt are required to obtain some form of air pollution permit from DNR to operate or to change operations by adding new equipment or modifying current equipment.

Refer to page A-3 to review the Facility VOC Size Category definitions.

Based on the permit rules as of January 2006, printers that fit in the Very Small and Small Printer categories of the ERP are exempt from permit requirements. Only Medium Printers are required to have some form of permit. The following permits may be required:

Existing Operations

Medium Printers are covered by the Type C Registration Operation Permit for Printers (ROP-C). The ROP-C allows facilities to construct or modify their operations without obtaining a separate construction permit as long as actual emissions of all pollutants (VOCs, HAPs, and criteria pollutants) remain below the eligibility thresholds for the ERP during each calendar year.

Kristin's contact information is: Kristin.Hart@Wisconsin.gov or 608.273.5605.

ROP and ERP forms and procedures:

- a copy of the ROP is available in the Cyan Ink Room section of this workbook for your information
- Complete DNR's on-line permit application at: **http://dnr.wi.gov/org/aw/air/apii/regpermits.html**
- if a Medium Printer has any existing permits, they should be revoked prior to submitting the self-certification--contact **Kristin Hart at DNR** for assistance with this process
- completing the ERP self-certification will satisfy DNR requirements for annual certification under the ROP

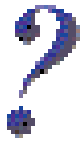
Could new or modified operations make my facility ineligible for the ERP?

Yes. If a project to construct or modify operations causes emissions to exceed the thresholds for Medium Printer size your facility would be ineligible for participation in the ERP. Also your facility would no longer be eligible for coverage under the ROP.

Prior to beginning any work on such a project, you MUST:

1. Receive an Air Pollution Construction Permit:
   a. You may have the option of applying for a traditional permit or a General Construction Permit.
   b. Contact the DNR for information on the permit options, or go to the DNR website to view a list of available permits.
2. Submit an application for either a traditional or a General Operation Permit.

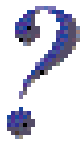
Answer question A.13 below based on your operations during the 12-month period prior to submitting the self-certification form. Answer **"not applicable"** if this is the first time completing the self-certification and you do not have a ROP yet.

	**Question A.13:** Have you evaluated all construction or modification projects during the past 12 months to make sure you are still eligible for the ERP and ROP?	❑ Yes. ❑ No. ❑ Not applicable. No changes were made in the past 12 mo.

Best Management Practices:

The following items are recommended best management practices (BMPs). Use the following checklist to review your progress on each item.

Process or procedure	Done	Needs Attention	Not Applicable
Do you re-use clean-up solvents?			
Do you recycle/reuse inks?			
Do you use water-based or other alternative inks?			

	**Question A.14:** Have you adopted any of the recommended BMPs?	❑ Yes. ❑ No. Recommended.